

Laboratory Report SI3610.12.09

Simulated Uplift Testing
of
SofSurface Panels
in accordance with
FM Standard 4470

Prepared for:
SofSurfaces
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I. SIMULATED WIND UPLIFT RESISTANCE – 10 x 10 FT WIND UPLIFT TEST

I.1 Specimen Preparation:

I.1.1 Specimens measuring 10 ft x 10 ft were constructed for each of the following sample descriptions. The specimen was built atop the specified roof deck and allowed to cure.

I.1.2 19/32” Plywood deck was modified to incorporate 1-inch diameter holes, spaced 2 ft o.c., to allow the vacuum pressure vessel to deliver air pressure to the underside of the test specimen.



View of Prepared Plywood Deck

Table 1A: Summary of 10 x 10 ft Specimen Constructions						
Sample ID	Deck	Waterproofing Layer	Insulation		Roof Cover	
			Type	Attach	Ply Sheet	Tile
A	19/32” plywood	Reinforced EPDM	2 layers of XPS with staggered joints	Loose laid	FilterCloth	Soft Surface

I.1.3 Soft Surface Tiles were installed as per manufacturer’s instructions and adhered with Sika Adhesive at a rate of 20 lineal ft per tube.

I.2 Procedure:

I.2.1 The simulated wind uplift pressure tests utilize an inverted vacuum pressure vessel to apply air pressure from below the deck.

I.2.1 A net vacuum pressure of 30psf (1.4kPa) is applied to the test specimen and maintained for 1 min. The pressure is increased to 45psf (2.2kPa), then to 60psf (2.9kPa) and held for 1 min. after each increment. The pressure is increased 15psf (0.7kPa) every min. until failure occurs.

Table 1B: Test Results, Sample A	
Plywood / Reinforced EPDM / 2 layers of XPS / FilterCloth / SoftSurface Panels	
Sample ID:	A
Failure Pressure (psf):	150
Failure Time (sec):	45
Failure Mode:	Seam Failure
Passing Pressure (psf):	135
2:1 Safety Margin (psf):	67.5

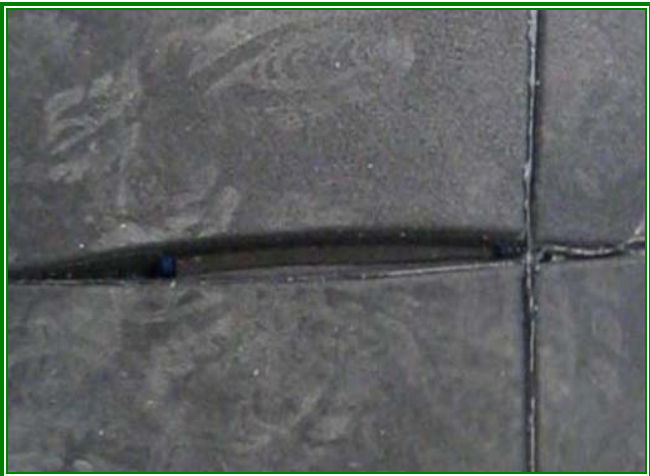


Photo 1: Overview of Failure Mode

2. CONCLUSIONS:

2.1 Trinity|ERD has tested SofSurface Panel systems, described in Table IA in accordance with the procedures set forth in FM Standard 4470, resulting in the wind uplift resistance data noted in Tables IB.

Please contact our offices with any questions.

Sincerely,
 TRINITY | ERD



Charles Phillips
 Laboratory Manager

Reviewed by:



Robert Nieminen, P.E.
 Vice President

REPORT HISTORY:

<u>Date</u>	<u>Event</u>	<u>Notes</u>	<u>Authorized By:</u>
05/22/2009	Draft Report Issued	For Client Review	RN
12/16/2009	Final Report Issued	None	RN

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